



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,231	09/18/2003	Stuart Gifford Hay	10554/3	8476

26646 7590 03/29/2005

KENYON & KENYON
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER

NGUYEN, HOANG V

ART UNIT	PAPER NUMBER
----------	--------------

2821

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/666,231

Applicant(s)

HAY ET AL.

Examiner

Hoang V. Nguyen

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-3, 12, 14-16, 25, 27-29, 38 and 40-42 is/are rejected.
 7) ☒ Claim(s) 4-11, 13, 17-24, 26, 30-37, 39 and 43-46 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 3/4/05.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-3, 12, 14-16 and 25 are rejected under 35 U.S.C. 102(a) as being anticipated by Albertsen et al (AP-S International Symposium on Antennas and Propagation, vol. 1, 17 June 1985, pages 357-360).

Regarding claim 1, Albertsen (pages 357-358) teaches a method of designing a shaped-reflector multibeam antenna comprising the steps of providing an initial configuration of reflectors shaped by an iterative procedure; optimizing radiation patterns of the feeds through an iterative process; and optimizing reflector surface shapes through iterative process.

Regarding claim 2, as applied to claim 1, Albertsen (pages 357-358) teaches that the reflectors comprise a main reflector and a subreflector being illuminated by the feeds.

Regarding claim 3, as applied to claim 1, Albertsen (page 358) teaches that each feed comprises a radiating element.

Regarding claim 12, as applied to claim 1, Albertsen (pages 357-358) teaches that the two optimizing steps are performed in one or more iterations.

Regarding claims 14-16 and 25, the Albertsen design would yield an apparatus for electromagnetically designing a shaped reflector multibeam antenna as claimed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 27-29, 38 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albertsen et al.

Regarding claim 27, Albertsen teaches a method of designing a shaped-reflector multibeam antenna comprising the steps of providing an initial configuration of reflectors shaped by an iterative procedure; optimizing radiation patterns of the feeds through an iterative process; and optimizing reflector surface shapes through iterative process. Albertsen, however, fails to explicitly mention that the designing process can be done through a computer program. It would have been obvious to one of ordinary skill in the art to employ Albertsen's design process through a computer program, doing so would speed up the iterative process and achieving the desired design feature within a short amount of time.

Claims 28, 29 and 38 are allowed for depending on claim 27.

Regarding claim 40, Albertsen teaches a method of designing a shaped-reflector multibeam antenna comprising the steps of providing an initial configuration of reflectors shaped by an iterative procedure; optimizing radiation patterns of the feeds through an iterative process; and optimizing reflector surface shapes through iterative process. Albertsen, however, fails to further teach that the designing process can be done through a storage unit for storing a computer program and processing unit. It would have been obvious to one of ordinary skill in the art to

Art Unit: 2821

employ Albertsen's design process through a computer program and processing unit, doing so would speed up the iterative process and achieving the desired design feature within a short period of time.

Claims 41 and 42 are allowed for depending on claim 40.

Allowable Subject Matter

5. Claims 4-11, 13, 17-24, 26, 30-37, 39 and 43-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4, 13, 17, 26, 30, 39 and 43, Albertsen fails to further teach, among other features, the means or step of calculating the gain radiation patterns of beams of the multibeam antenna using methods of physical optics or the geometrical or physical theories of diffraction.

Regarding claims 5, 18, 31 and 44, Albertsen fails to further teach, among other features, that the optimizing means or step for the radiation patterns of the feeds comprises shaping of the radiation patterns of the feeds to decrease spillover of the beams at one or more of the reflectors of the multibeam antenna.

Regarding claims 6, 19, 32 and 45, Albertsen fails to further teach, among other features, that the optimizing means or step for the radiation patterns of the feeds comprises shaping the radiation patterns of the feeds to compensate for distorting effects of the reflectors on shapes of the beams or to increase rotational symmetry of the beams at one or more reflectors of the multibeam antenna.

Art Unit: 2821

Regarding claims 7, 20, 33 and 46, Albertsen fails to further teach, among other features, that the optimizing means or step for the surface shapes and sizes of the reflectors comprises optimizing the reflectors to increase rotational symmetry or decrease spillover of the beams at one or more of the reflectors of the multibeam antenna.

Regarding claims 8-11, 21-24 and 34-37, Albertsen fails to further teach, among other features, that the optimizing steps comprise representing the sizes or shapes of the feeds or the reflectors in terms of a set of variable parameters and optimizing one or more of these parameters.

Correspondence

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V. Nguyen whose telephone number is (571) 272-1825. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoang Nguyen can be reached on (571) 272-1825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application Number: 10/666,231
Art Unit: 2821

Page 6

Hvn
3/22/05

A handwritten signature in black ink, appearing to read 'Hoang V. Nguyen', with a long horizontal stroke extending to the right.

**HOANG V. NGUYEN
PRIMARY EXAMINER**